

HISTORICAL REVIEW OF THE EMF PROPERTY

Summary of EMF Lease Property

The Electronic Manufacturing Facility (EMF) is a Boeing owned building that is situated on property leased from King County. The EMF property lease is part of a seventy^{FIVE} year lease between Boeing and King County which commenced in the 1930's. This complex lease also covers several other properties located at the King County Airport.

From the 1930's to the late 1950's, the only structures on the EMF subject property were two aircraft hangers. These hangers were used for prototype aircraft assembly during the 1930's through the late 1940's. In the late 1950's, Boeing constructed a high bay structure between the two hangers, thereby connecting the two hangers into a single roofed building. This building is known as EMF and has a Boeing facilities building code of 3-962. Boeing conducted several different aircraft operations at EMF from the 1950's to the present, some of which are discussed in detail below.

Currently, Boeing Defense & Space Group has custodianship of the EMF building and oversees the operations conducted there.

Electronic Circuit Board Manufacturing & Associated Cleanups

From the mid 1960's to the late 1970's, electronic circuit boards were manufactured at EMF. Process liquids associated with circuit board manufacturing are known to have been released to the soils at the EMF property. The liquids released were chromic acid and various organic solvents, ~~which were used in the circuit board etching and cleaning operations.~~ used in the circuit board etching and cleaning operations. The liquid etching and cleaning processes were conducted in the central portion of the EMF building.

Electronic circuit board manufacturing was discontinued at EMF in the late 1970's. The chromic acid storage tanks and the solvent cleaning baths were removed from EMF in the early 1980's. ~~During the removal activities, contaminated soils associated with the plumbing system for the chromic acid tanks and the solvent baths were encountered under the central portion of the EMF foundation. These contaminated soils were left in place because it was determined that their removal might compromise the structure of the building.~~ During the removal activities, contaminated soils associated with the plumbing system for the chromic acid tanks and the solvent baths were encountered under the central portion of the EMF foundation. These contaminated soils were left in place because it was determined that their removal might compromise the structure of the building.

Contaminated soils also were encountered outside the EMF foundation. This contamination was attributed to the used process liquid sump collection system located inside the EMF building and the chromic acid storage tank and piping

located outside. In 1984, the used chromic acid storage tanks and related piping outside the EMF foundation were removed. Associated contaminated soils also were excavated and disposed of at a hazardous waste landfill.

In the mid 1980's pursuant to negotiations with WDOE & EPA, soil borings were drilled and completed as groundwater monitoring wells in and around the EMF building. Laboratory results from the soil boring samples indicate that constituents of concern are present in the subsurface soils at EMF. Groundwater sample results confirmed the presence and show the aerial extent and migration of contaminated groundwater at EMF over time. Annual groundwater monitoring has been conducted at EMF since 1986.

Based on the foregoing information, it is assumed in this report that a majority of the soils contaminated during past operations at EMF are still located under the central portion of the building.

PLANNED REMEDIATION ACTIVITIES

Soil and ground water sampling to date at the EMF facility indicate the existence of some sub-surface contamination, possibly from past manufacturing activities in the 3-962. The extent and severity of this contamination can not be determined from the information gathered to date.

The data indicates two potential sub-surface problems. Field reports generated during the removal of the chromic acid tank system indicate that soil contaminated with chromium may not have been completely remediated. Ground water sampling conducted since 1985 has indicated the presence of metals in the ground water, but typically below MTCA Method B clean-up levels for ground water. Some amount of contaminated soil removal is anticipated upon demolition of the building.

Volatile organic compounds (VOC's) have also been detected in the ground water in and around the 3-962 building. Some of the processes that were housed in this building in the past used Trichloroethene (TCE) for various purposes. At some time, TCE tanks and associated piping ran through out the building. No information exists as to how TCE may have entered the ground water system or if any of the adjacent properties may have used solvents that may be migrating onto the EMF facility property. TCE and it's degradation products (Dichloroethene, Vinyl Chloride) have been detected above MTCA method B in several wells around the facility. It will be necessary to construct

additional wells to define the nature and extent of the VOC contamination, upon building demolition.

Based on the existing data, the problem may be cleaned-up in a reasonable period of time and with little or no impact to future operations of the property, by installing a ground water pump and treat system.